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EXAMINER	
CRAIG, PAULA L	

ART UNIT	PAPER NUMBER
3761	

DATE MAILED: 07/26/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/736,494	MITSUI ET AL.	
	Examiner	Art Unit	
	Paula L. Craig	3761	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *17 December 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-11* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☐ Claim(s) _____ is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *12/17/2003*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Specification

1. The disclosure is objected to because of the following informality: Reference character "41" has been used to designate both a napkin and a topsheet (see page 41, lines 6 and 7). Appropriate correction is required.

Claim Interpretation

2. In Claim 1, the Examiner interprets the term "continuously" to mean that the adhesive lines are not dotted lines, and that each adhesive line is formed by a continuous bead of adhesive with few or no breaks. The Examiner interprets "much more quantity of said adhesives" in Claim 1, line 10 to mean greater thickness or amount of adhesive material.

3. Claim 7 includes the limitation "said adhesives are defined by said adhesive lines applied on said core and a spread of said adhesives applied on said core". However, in the independent claim the adhesive lines are stated to be applied on the surfaces of the pair of sheets rather than the core (see Claim 1, lines 7-8). For purposes of this examination, since the adhesives are binding together the core and the sheets, the Examiner considers that application to the sheets is equivalent to application to the core. Claim 7 also recites "a mixture of fluff pulp, super-absorbent polymer particles and thermoplastic synthetic resin fibers" in lines 2-3 and "a mixture of said pulp and said

polymer particles" in line 3; the Examiner interprets this limitation as requiring fluff pulp and superabsorbent polymer particles, but not thermoplastic synthetic resin fibers.

4. For Claim 9, "at least of" in line 1 is interpreted by the Examiner to mean "at least one of", and "said composite sheet have" in line 4 is interpreted by the Examiner as "said composite sheet has". Also in Claim 9, line 4, "said nonwoven fabric and" is interpreted by the Examiner to mean "said nonwoven fabric, and".

Claim Rejections - 35 USC § 112

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claim 10 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

7. Claim 10 recites the limitations "at least said top- and backsheets" in line 9 and "said leak-barrier sheets" in line 10. There is insufficient antecedent basis for these limitations in the claim. Claim 10, line 6, uses the term "of" before "a liquid-pervious topsheet", "a liquid-impervious backsheet" and "liquid-impervious leak-barrier sheets", so that it is not clear whether the presence of a topsheet, a backsheet, and leak-barrier sheets are all required by the claim.

Claim Rejections - 35 USC § 102

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –

9. Claims 1, 4, 6-8, and 10 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 6,635,798 to Yoshioka.

10. For Claim 1, Yoshioka '798 discloses a disposable wearing article having a pair of sheets opposed to each other, and a liquid-absorbent core between the pair of sheets (see reference numbers 2, 3, 4, and 5 of Figs. 1 and 3, and col. 2, lines 31-36). The Examiner considers that each sheet may be a composite of two or more sheets, as stated in Claim 9 of Applicant's specification. Yoshioka '798 shows portions of the pair of sheets extending outward beyond a peripheral edge of the core in a circumferential direction (see Fig. 3 and col. 3, lines 58-67). The sheets are permanently joined to each other by means of adhesives (see reference numbers B1, B2, and B3 of Figs. 1 and 3, and col. 3, lines 29-37). The core is permanently joined to at least one of the sheets by means of adhesives (see Yoshioka '798, reference numbers B1, B2, and B3 of Fig. 3, and col. 3, lines 29-37). The adhesives are defined by a plurality of adhesive lines applied on at least one of the opposed surfaces of the pair of sheets (see Yoshioka '798, reference numbers B1, B2, and B3 of Fig. 1, and col. 3, lines 29-49). The adhesive lines extend continuously in a given direction (see Fig. 1). Each of the adhesive lines has first zones and second zones alternately arranged on the adhesive line so that each of the first zones contains much more quantity of the adhesives than each of the second zones contains. Note that Yoshioka '798 discloses adhesive lines

with a general zigzag, wave, or square wave configuration; the adhesive lines intersect themselves occasionally (see Fig. 1, col. 1, line 66 to col. 2, line 4, and col. 5, lines 36-47 and 60-63). The intersection of the adhesive line with itself creates an area in which there is a double thickness of adhesive material; this is the first zone. The remainder of the adhesive line, which has only a single thickness of adhesive material, is the second zone.

11. In addition, Yoshioka '798 discloses that if an adhesive is used with a viscosity number larger than 5500 cP, the adhesives may solidify in clusters; this would inherently create first zones even between intersections (see col. 6, lines 37-45). *In re Fitzgerald,* 205 USPQ 594 (CCPA 1980). Note that there is no requirement in Claim 1 that the first and second zones should alternate at regular intervals.

12. For Claim 4, Yoshioka '798 inherently discloses the length of the first zone being in a range of 1 to 10 mm and the length of the second zone being in a range of 0.5 to 80 mm. *In re Fitzgerald,* 205 USPQ 594 (CCPA 1980); *In re Schreiber*, 128 F.3d 1473, 44 USPQ2d 1429 (Fed. Cir. 1997). Yoshioka '798 teaches that the adhesive lines may repeat bending as few as 50 times per meter of sheet member, or one bend per 20 mm of sheet member (see col. 5, lines 37-41). Intersections may occur as often as 200 times per meter of sheet member, or one intersection per 5 mm of sheet member (see col. 5, lines 39-41). This would create first and second zones having lengths within Applicant's claimed range. Therefore, absent evidence to the contrary, the structure taught by Yoshioka '798 is presumed to have Applicant's claimed range.

13. For Claim 6, Yoshioka '798 discloses a spread of adhesive on the pair of sheets in the range of 2.0 to 100 g/m^2. Yoshioka '798 discloses 3 to 8 g/m^2 and 0.8 to 8 g/m^2 (see col. 6, lines 7-11, and col. 7, lines 43-48).

14. For Claim 7, Yoshioka '798 discloses the core being formed of a mixture of fluff pulp and high-absorbent polymer particles (see Yoshioka '798, col. 6, lines 57-60). As stated above in paragraph 3, the Examiner interprets Claim 7 as not requiring thermoplastic synthetic resin fibers. Yoshioka '798 discloses a spread of adhesives applied in a range of 2.0 to 100 g/m^2, as stated above for Claim 6 in paragraph 13. As stated above in paragraph 3, application of the adhesive lines to the core is considered by the Examiner to be equivalent to application to the sheets.

15. For Claim 8, Yoshioka discloses at least one of the pair of sheets being formed from at least one of a fibrous nonwoven fabric layer and a plastic film layer. A plastic film layer is sufficient to anticipate this limitation. Yoshioka teaches a plastic film layer; a synthetic resin film is stated to be suitable for backsheet 3 and barrier sheet 6 of Yoshioka (see col. 6, lines 46-51).

16. For Claim 10, Yoshioka discloses the wearing article being a disposable diaper (col. 2, lines 30-31). The diaper has front and rear waist regions and a crotch region extending between the waist regions so as to be contoured by a pair of end flaps and a pair of side flaps (see Fig. 1). The end flaps extend in a transverse direction outside longitudinally opposite ends of the core, while the side flaps extend in a longitudinal direction outside transversely opposite side edges of the core (see Fig. 1). Yoshioka discloses a liquid-pervious topsheet lying on a side facing a wearer's skin, and a liquid-

impervious backsheet lying on a side facing away from a wearer's skin (see col. 2, lines 30-38). Yoshioka also teaches liquid-impervious leak-barrier sheets extending in the longitudinal direction and normally biased to rise above the core (see barrier sheet 6, Fig. 1 and col. 3, lines 16-28). The topsheet and backsheet define the pair of sheets, and the backsheet defines the end flaps and side flaps (see Fig. 1).

Claim Rejections - 35 USC § 103

17. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

18. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

19. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,635,798 to Yoshioka et al.

20. For Claim 11, Yoshioka '798 discloses all the limitations of Claim 1, as stated above in paragraph 10. Yoshioka also teaches that the disposable wearing article may

be a sanitary napkin (col. 1, lines 4-8). Yoshioka teaches front and rear regions, an intermediate region, end marginal zones, lateral marginal zones, a topsheet, a backsheet, and the backsheet defining the end marginal zones and lateral marginal zones for the disposable wearing article (see Fig. 1). The invention of Yoshioka is an improvement in adhesive application which secures the components together while maintaining liquid permeability (col. 1, lines 28-55). The invention is described using a disposable diaper as an example (Yoshioka, col. 2, lines 26-29). Yoshioka does not expressly teach these elements using a sanitary napkin example. Since Yoshioka teaches that the improvement would apply equally well to a sanitary napkin, the sanitary napkin would be expected to have the same general components as the disposable diaper example. Front, rear, and intermediate regions; end marginal and lateral marginal zones; and a topsheet and backsheet are well known as standard components for a sanitary napkin. A person skilled in the art attempting to modify the disposable wearing article of Yoshioka to manufacture a sanitary napkin would have found it obvious to include the claimed elements in order to make a sanitary napkin.

21. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,635,798 to Yoshioka et al. in view of U.S. Patent No. 5,354,597 to Capik et al.

22. For Claim 3, Yoshioka '798 discloses all the limitations of Claim 1, as stated above in paragraph 10. Yoshioka does not expressly disclose the adhesive line folded in three layers placed one upon another in a thickness direction of the article in the first zone, as required by Claim 3. Capik discloses a three-layer laminate tape including an

elastomeric layer 3 bounded by two less elastic skin layers 2 and 4 (See Capik, Figs. 1 and 2, and col. 9, lines 6-11). The skin layers may have an adhesive applied to them, or the adhesive may be co-extruded with the other layers (see Capik, col. 11, line 66 to col. 12, line 17). The tape is stretched and then relaxed, forming a microstructured surface with many folds (see Fig. 2, col. 9, lines 58-62, and col. 10, lines 8-11 and 30-35). The adhesive is preferably microstructured along with the skin layer, to improve bonding (see Capik, col. 12, lines 4-28, and Claim 4). The adhesive of Capik is continuous (see Capik, Claim 1). While the adhesive would be uniformly applied, the folding of the microstructure would form first and second zones, with the first zones having much more adhesive than the second zones (see Capik, Fig. 2). Capik shows the microstructure folds folding back over themselves in three layers in a thickness direction (see particularly the bottom right corner of Fig. 2). Capik therefore discloses an adhesive line folded in three layers placed one upon another in a thickness direction of the article in the first zone, as required by Claim 3. The microstructured tape may be used in a disposable wearing article such as a diaper (see col. 15, lines 28-44). It would have been obvious to one of ordinary skill in the art at the time of the invention by the applicant to modify the disposable wearing article of Yoshioka '798 to include an adhesive line folded in three layers placed one upon another in a thickness direction of the article in the first zone, to improve bonding.

23. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yoshioka in view of Capik, and further in view of U.S. Patent No. 4,849,049 to Colton.

24. Claim 2 requires a quantity of adhesives in the first zone which is three or more times larger than the quantity in the second zone. This limitation is considered to be disclosed by Yoshioka and Capik, as stated above for Claim 3 in paragraph 22. Claim 2 additionally requires a quantity of adhesives in the first zone of 0.0001 to 0.0045 g/cm and in the second zone of 0.00003 to 0.0008 g/cm. Yoshioka/Capik do not expressly show these specific ranges. Colton shows a method of adhesively joining surfaces of a disposable diaper using quasi-random sputters of droplets and filaments of adhesive (see Colton, Fig. 5 and col. 2, lines 19-42). This is stated to give a stronger bond using less adhesive (Colton, col. 2, lines 43-52). Such a quasi-random application of adhesive would produce at least some adhesive lines having first and second zones in the claimed ranges. The quasi-random adhesive pattern of Colton has the same purpose as the adhesive pattern claimed by Applicant: to improve bonding. It would have been obvious to one of ordinary skill in the art to modify the absorbent article of Yoshioka/Capik to include adhesive applied in a quasi-random pattern including the claimed ranges, to improve the bond and use less adhesive.

25. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yoshioka in view of U.S. Patent No. 3,727,615 to Duchane.

26. For Claim 5, Fig. 4 of Yoshioka discloses that occasionally more than two adhesive lines may intersect in the same area, so that both intersections would form a single second zone (see, for example, the top right corner of Fig. 4). This forms a second zone with a width of three or more times the width of the first zone. Yoshioka '798 does not expressly disclose a width of the first zone in a range of 0.01 to 3 mm, a

width of the second zone in a range of 0.003 to 0.5 mm, or the width of the first zone being three or more times the width of the second zone. Yoshioka does not mention the width of the adhesive line, either before or after joining the surfaces. (The width of any adhesive line after the surfaces are joined and compressed would depend greatly on the viscosity of the adhesive, the pressure used in lamination, and the degree to which the adhesive is absorbed by either of the surfaces.)

27. Duchane discloses an adhesive line width of 0.01 inch, or about 0.3 mm, which falls within the claimed range of 0.003 to 0.5 mm for the second zone (see Duchane, col. 3, lines 27-28). Duchane further states that the adhesive line width should be as small as possible (Duchane, col. 3, lines 17-19). Duchane uses the adhesive to bond a nonwoven material, for use in a sanitary napkin, giving desirable strength and stretch characteristics (see col. 1, lines 4-6, and col. 7, line 1). It would have been obvious to one of ordinary skill to modify the disposable wearing article of Yoshioka to include an adhesive line width of 0.003 to 0.5 mm for the second zone, and for the first zone to have an adhesive line width of three or more times the width of the second zone and also within the range of 0.01 to 3 mm, in order to give desirable strength and stretch characteristics to the disposable wearing article.

28. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yoshioka '798 in view of U.S. Patent No. 6,417,122 to Newkirk et al.

29. For Claim 9, Yoshioka '798 discloses all the limitations of Claim 1, as stated above in paragraph 10. Yoshioka also discloses at least one of the pair of sheets being a composite sheet (see Yoshioka '798, Fig. 1). Yoshioka teaches that the topsheet 2

may be a synthetic resin film and a nonwoven fabric laminated together (see Yoshioka, col. 6, lines 46-56). Yoshioka does not expressly disclose the plastic film being elastically stretchable. Newkirk teaches an elastic film laminated with a nonwoven fabric (see Newkirk, col. 22, lines 33-54). Newkirk also teaches a composite sheet having a thickness of 0.2 mm or larger (see Newkirk, col. 23, Table 4, Sample H). Newkirk does not expressly teach a composite sheet having the claimed compressibility. However, page 13, lines 11-21, page 28, lines 6-22, and page 42, line 19 to page 44, line 12 of Applicant's specification set forth materials capable of being the claimed elastically stretchable plastic film and the nonwoven fabric. Suitable materials are stated to include elastically stretchable hydrophobic fibrous nonwoven fabric and elastically stretchable breathable liquid-impervious plastic film, among others. Newkirk teaches similar materials for the film and the nonwoven fabric (see particularly Newkirk, Examples 9 and 11 in col. 21-22). Thus, Newkirk obviously includes films and fabrics capable of being laminated and contractibly joined as required by Claim 9. The composite fabrics of Newkirk are stated to be superior in extensibility, tensile properties and abrasion resistance, suitable for disposable diapers and the like (see Newkirk, col. 1, lines 28-33 and col. 3, lines 12-17). It would have been obvious to modify the wearing article of Yoshioka to include a composite sheet of elastic film and nonwoven fabric having the claimed values of compressibility and thickness, to improve extensibility and other properties.

Conclusion

30. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. U.S. Patent Nos. 2,705,498 to Johnson, 2,734,843 to Steele, 3,677,249 to Kokx, 3,682,755 to Lee, No. 4,081,301 to Buell, 4,960,619 to Slautterback et al., 5,107,866 to Aronoff et al., 5,569,231 to Emenaker et al., 5,800,867 to Matsunaga et al.,5,882,573 to Kwok, 5,942,062 to Hassall et al., 6,602,554 to Kwok, and 6,461,431 to Kwok show adhesive applied in grid patterns, stripes, dots, irregularly spaced droplets, a dumbbell shape, a random spray, or overlapping loops. U.S. Patent No. 3,730,798 to Franz shows a method of producing dripping and smudging of a glue line. U.S. Patent No. 4,488,923 to Pieniak shows elastic strands with thin areas alternating with thicker areas. U.S. Patent No. 4,573,986 to Minetola et al. shows a disposable diaper having networks of adhesive filaments which intersect to create double and triple thicknesses of adhesive material. U.S. Patent No. 4,874,451 to Boger et al. shows adhesive applied in a pattern of intermittent parallel rows. U.S. Patent No. 4,894,277 to Akasaki shows a method for applying an adhesive so that elongated strands of adhesive are formed in an open weave. U.S. Patent No. 5,024,667 to Malcolm et al. shows an adhesive application rate. U.S. Patent No. 5,330,598 to Erdman et al. shows elastic strips overlaid on one another. U.S. Patent No. 5,421,921 to Gill et al. shows an adhesive filament line with thickened edges. U.S. Patent No. 5,643,384 to Okabe shows manufacture of pulp sheets which may include slightly rotating the feeding rollers in reverse (which could produce a folding over of the adhesive line). U.S. Patent No. 5,688,218 to Jenkins describes a common problem in the prior art of adhesive

application, in which globs of adhesive are produced whenever the adhesive head starts, stops, or makes a sharp turn. U.S. Patent No. 5,868,725 to Coles et al. shows an elastic film laminate and a method for determining compressibility. U.S. Patent No. 5,984,911 to Siebers et al. shows adhesive that may be applied in any pattern with spaced-apart areas. U.S. Patent No. 6,120,487 to Ashton shows adhesive application. U.S. Patent No. 6,325,786 to Bjorklund et al. shows the use of thermoplastic fibers as a binder. U.S. Patent No. 6,602,238 to Takei et al. shows elastic members with zones of different elasticity along the same elastic strand. U.S. Patent Publication No. US2003/0045845 A1 to Yoshioka shows an absorbent core formed by a mixture of fluff pulp, super-absorbent polymer particles and thermoplastic synthetic resin fiber. SIR US H1978 H to Freiburger et al. shows a film with zones of breathability made by selectively applying adhesive to the film.

31. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Paula L. Craig whose telephone number is (571)272-5964. The examiner can normally be reached on 8:30AM-5:00PM M-F.

32. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tatyana Zalukaeva, can be reached on (571)272-1115. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

33. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Paula L Craig
Examiner
Art Unit 3761

PLC

TATYANA ZALUKAEVA
PRIMARY EXAMINER